

SDMS US EPA REGION V -1

**SOME IMAGES WITHIN THIS
DOCUMENT MAY BE ILLEGIBLE
DUE TO BAD SOURCE
DOCUMENTS.**



ecology and environment, inc.

International Specialists in the Environment

111 West Jackson Boulevard
Chicago, Illinois 60604
Tel: (312) 663-9415, Fax: (312) 663-0791

September 30, 1994

Gail Nabasny
Deputy Project Officer
Emergency Support Section
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604

Re: Sauget Area 1 - Special Project
Sauget, St. Clair County, Illinois

TDD No.: T05-9407-902
PAN No.: EIL0836JAA

Dear Ms. Nabasny:

On July 21, 1994, the U.S. Environmental Protection Agency (U.S. EPA) tasked the Ecology and Environment (E & E) Technical Assistance Team (TAT), under Technical Direction Document (TDD) number T05-9407-902, to subcontract services for a helicopter flyover with infrared video camera thermal imagery. The purpose of the flyover was to conduct infrared thermal imagery of a partially-covered landfill at the Sauget Area 1 Site in Sauget, St. Clair County, Illinois. A second helicopter flyover was conducted during the daytime to take aerial photographs. The following letter report describes activities associated with this TDD.

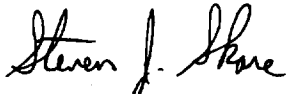
The TAT procured three bids for the thermography work and helicopter services. Hot Shots Infrared Inspections (Hot Shots), Denver, Colorado, submitted the low bid and subcontracted helicopter services with Fostaire Helicopters of Sauget, Illinois. The site thermography survey was performed on the evening of August 25, 1994, using an FLIR Systems, Inc., externally-mounted, forward-looking infrared camera system, model no. 2000F. The equipment has a thermal resolution of 1/10th°F and utilizes a mercury, cadmium, telluride (HgCdTe) detector array. Data was recorded on S-VHS videotape format using a Global Positioning System (GPS) recorder. The site thermography survey was conducted from several positions, including full overview, all four quadrants (i.e. SW1/4) of the site, and closeups of suspected "hot spots". Aerial photography services were subcontracted through Sickie & Sons, Inc., and were performed on August 26, 1994.

From the video footage and corresponding photos, no temperature anomalies were recorded over the nearby Queeny Avenue baseline of 110°F. Using the reference temperature as a basis of interpretation, it can be concluded that no fires are currently burning at or near the surface. No evidence of subsurface fires were discernible; however, the possibility exists that fires could be burning below the surface which were not detectable by the infrared camera.

A narrative report, supported by videotape, prints from video footage, and aerial photography, was submitted to E & E by Hot Shots, and is included as an Attachment A. For more information regarding the site inspection, please refer to this attachment.

If you should have any questions or require additional information, please contact our office.

Sincerely,

A handwritten signature in cursive script, appearing to read "Steven J. Skare".

Steven J. Skare
TAT Member

Thomas Kouris
TAT Leader

Attachment: Attachment A - Hot Shots Narrative Report,
Videotape, Aerial Photographs

cc: OSC Samuel Borries
TDD File

SPECIAL PROJECTS INTERIM CLOSING COSTS

T05-9407-902

EIL0836JAA

SAUGET AREA 1 LANDFILL

ACTUAL:

\$ 4,575.00

W/2.26 MULTIPLIER:

\$10,339.50



CONFIDENTIAL

Infrared Trouble- Shooting Report



899 Logan Street • Suite 411 • Denver, Colorado 80203 • (303) 839-8307

HOT/SHOT

Infrared Inspections

Mr. Steve Skare
Ecology & Environment, Inc.
111 West Jackson Blvd.
Chicago, IL 60604

August 29, 1994

Dear Steve:

This report outlines the equipment used, procedures followed and the results obtain from our aerial infrared inspection of the Sauget Landfill - Site G. This inspection was performed the evening of August 25, 1994. Enclosed with this report is a video tape taken in infrared of the entire survey, several thermograms taken from the video and several aerial visible light photographs taken by a professional photographer.

EQUIPMENT: The survey was conducted using HOT/SHOT *Infrared Inspections*, FLIR Systems, Inc., model # 2000F, externally mounted Forward Looking Infrared camera system. This equipment has a thermal resolution of 1/10th°F, and a pictorial resolution of 525 lines per frame (560 CCIR) with 352 elements per line (420 CCIR). It utilizes a Mercury, Cadmium, Telluride, (HgCdTe) 2x4 TDI detector array, with an IR spectral bandwidth of 8-12 microns. It renders an image of an objects thermal emissions in shades of black to white, with white representing the hottest portion of the image. The data is then recorded on S-VHS video tape for later processing. The camera, mounted externally on the helicopter, is remotely controlled by the thermographer inside the cabin. All system operational controls are adjusted with the hand-held system controller. It contains output signal gain and level, and cage, which returns the camera to a preselected azimuth and elevation. LCRS rate stabilization, assisting the thermographer in manual target tracking by dampening the effects of aircraft motion, Field-of-regard (azimuth +120° to -120° and elevation +30° to -180°), Field-of-view (wide [1X] 28° x 15° and narrow [4X] 7° x 3.75°), image polarity, focus, and system power, are also remotely controlled.

HELICOPTER: For this survey HOT/SHOT subcontracted Fostaire Helicopters, located in Sauget, IL. The helicopter provided both the pilot and Bell 206B III helicopter, for the inspection. The pilot was Captain Scott Luttrell of Fostaire Helicopters and the A & P Mechanic for the FLIR installation was Clarke Thomas, President of Fostaire.

OBSERVER: Mr. Steve Skare, of Ecology & Environment, acted as observer for the Sauget landfill flyover. Mr. Skare was the technical advisor to HOT/SHOT for the flight specifics, as well as, the location of the landfill and specific areas incorporated with the landfill. It was also the task of Mr. Skare to take a running log of altitude, time, lens specifics, etc..

THERMOGRAPHER Mr. Christopher M. Cox was the thermographer performing the FLIR infrared inspection. Mr. Cox is a certified thermographer, certification number 3422 and achieved his certificate from the Infrasppection Institute, located in Shelbourne, VT, on July 26,

HOT/SHOT

Infrared Inspections

1992. During his three year tenure at HOT/SHOT, Mr. Cox has performed surveys in all aspects of thermography, specializing in Aerial Thermography. During the Hammond, IN landfill fire, Mr. Cox assisted Mr. Gil Miceli, Executive Vice President, in locating and identifying several hot spots for Ecology & Environment.

RESULTS: This aerial infrared inspection was performed using the aforementioned personnel and equipment on August 25, 1994, between 22:00 hours and 23:15 hours Central Standard Time. The ambient temperature for the survey was 80°F. The survey was recorded in its entirety on High-8, 8mm recording medium and has been transferred to VHS format for ease of later viewing.

For clarification purposes, please note, at the lower center of each picture and continuously on the video, there are a series of numbers, that warrant explanation. These numbers represent the "time stamp" from the Global Position Satellite (GPS) readings that have been interfaced with the FLIR infrared camera system. These numbers appear on the photographs as they appear on the actual VHS tape. The following is an example of the GPS format as it appears on each photograph:

- | | |
|-------------|---------------|
| 1) 215932 | 2) 220493 |
| 3) 5107.42N | 4) 114010.67W |
| 5) 052.1KTS | 6) 176.6TRK |

Which is interpreted as:

- 1) Time (21hrs., 59mins., 32secs., (Greenwich Mean Time))
- 2) Date (22nd day, 4th month, 93rd year)
- 3) Latitude 51 degrees, 07 minutes, 42 seconds, North (LAT)
- 4) Longitude 114 degrees, 10 minutes, 67 seconds West (LON)
- 5) Speed in Knots (KTS)
- 6) Track across the ground (TRK) - Heading

This information has been provided to give reference parameters for later data analysis.

After careful analysis, both during the flight and in post processing, it was determined that no anomalies were found at the Sauget Landfill - Site G. As was noted on the video, none of the suspected anomalies indicated a higher temperature than the neighboring Queeny Ave.. Queeny Ave. was used as a baseline by which to gauge normal solar loading and indicated a reference temperature of approximately 110°F. A fire, smoldering or open flame, would produce temperatures significantly higher and thus, would appear hotter on the video than the baseline Queeny Ave..

Referring to infrared picture 10, taken of an industrial piece of equipment, the apparent temperature of this object is far greater than any area surveyed at the landfill and thus, further indicates the lack of subsurface anomalies. The operating temperature of the industrial equipment is approximately 150°F. Using our two reference temperatures as our basis for interpretation, we can conclude that no fires are currently burning or at least burning close enough to the surface to be detected using infrared.

HOT/SHOT

Infrared Inspections

FLIGHT LOG: During the inspection, a log was taken of various altitudes, lens positions, times, etc.. Wind speed was 20 knots from the south. The log is as follows:

Date	Time	Direction	Altitude	Lens	Area	Comments
8/25/94	22:08	--	--	--	--	Departure
"	22:17	Facing South	2000ft.	1x	Full Overhead	--
"	22:18	Facing S.E.	950ft.	1x	N.W. 1/4	--
"	22:19	Facing East	950ft.	1x	N.E. 1/4	--
"	22:20	Facing South	1000ft.	1x	S.W. 1/4	--
"	22:21	Facing East	1000ft.	1x	Swamp S.E 1/4	--
"	22:22	Facing East	1200ft.	1x	N.E.1/4 Queeny	--
"	22:24	Facing South	1200ft.	1x	Close up oil pit	--
"	22:26	Facing S.E.	1200ft.	1x	Ravine	Small Hotspots
"	22:28	North to S.	900ft.	1x	West 1/2	Slow over top
"	22:30	North to S.	900ft.	1x	East 1/2	Slow over top
"	22:33	Facing South	575ft.	1x	N.E. 1/4	Close up
"	22:35	Facing South	575ft.	4x	N.E. 1/4	Close up
"	22:42	Facing S.E.	575ft.	4X	Ravine	Close up
"	22:45	--	--	--	--	Return Back
"	22:47	--	--	--	--	Landing

IR CODES: Please note the following infrared icon codes when viewing the video tape. These icons may be seen in the center of the screen.

no icon = 1x

[] = 1x

+ = 4x

AERIAL PHOTOGRAPHER: Sickles & Sons, Inc. provided the aerial photographs of the Sauget Landfill - Site G. The photographer on the flight was Mr. Fabian Sickles, President of Sickles & Sons, Inc.. Prior to the flight, the subject of "Altitude vs. Area" was discussed at length, both with Mr. Sickles and Mr. Skare. It was the decision of all parties that it was of greater importance to match area covered in the photographs, rather than matching the altitudes of the two flights. Therefore, the photographer was instructed to fill the frame of the photograph rather than attempt to match altitude.

IR & VISIBLE LIGHT PHOTOGRAPHS: Included with this report are several photographs, taken both in infrared and in visible light. These photographs include infrared thermograms of the entire Site G area, as well as, areas encompassing 1/4 of the site and several pictures of various smaller areas in which temperatures were noted. The visible light photographs were taken on August 26, 1994 and include various pictures of the landfill, including overview shots and closer, quad shots. Picture marked #3, taken from a northern posture facing south, has been selected for further enlargement. The enlargement photographs will be sent directly from Sickles & Sons to Ecology & Environment, and may be expected on Thursday, September 1, 1994.

HOT/SHOT

Infrared Inspections

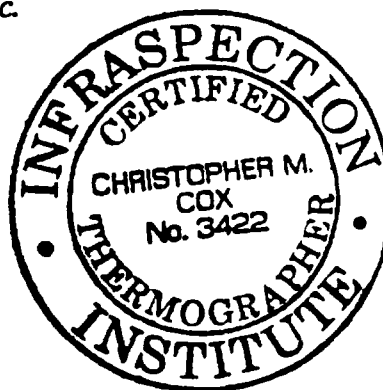
Steve, thank you again for this opportunity to work with you and Ecology & Environment. We are grateful for all the help you were able to provide us during the survey. If you have any questions regarding this report, please contact me. In the meantime we look forward to working with you again in the near future.

Sincerely,
HOT/SHOT Infrared Inspections, Inc.



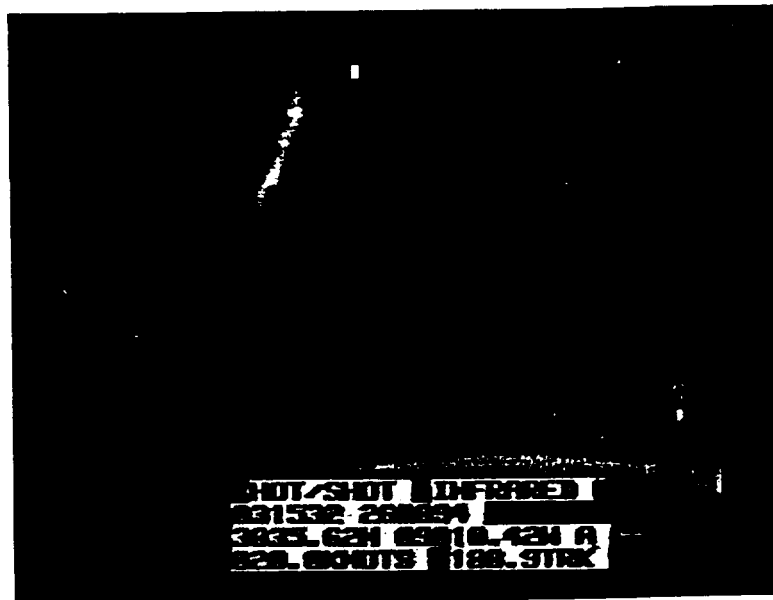
Christopher M. Cox
Certified Thermographer

CMC:kl
Enclosure

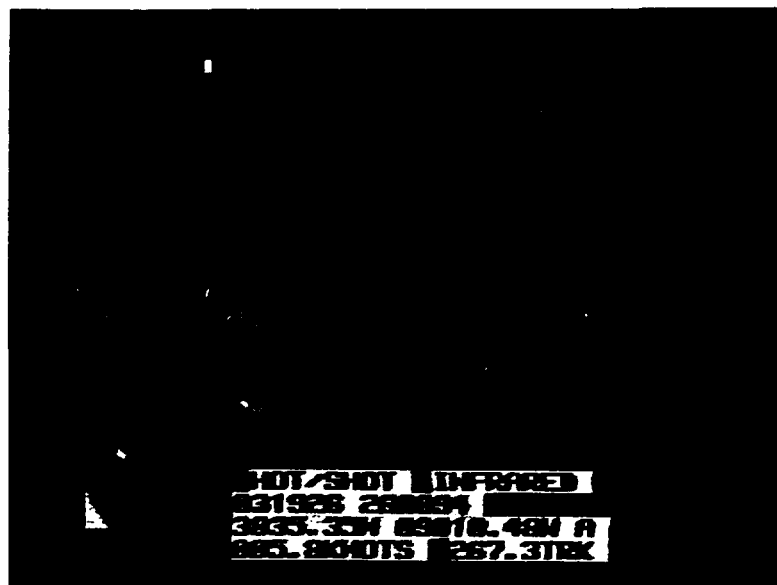


HOT/SHOT

Infrared Inspections



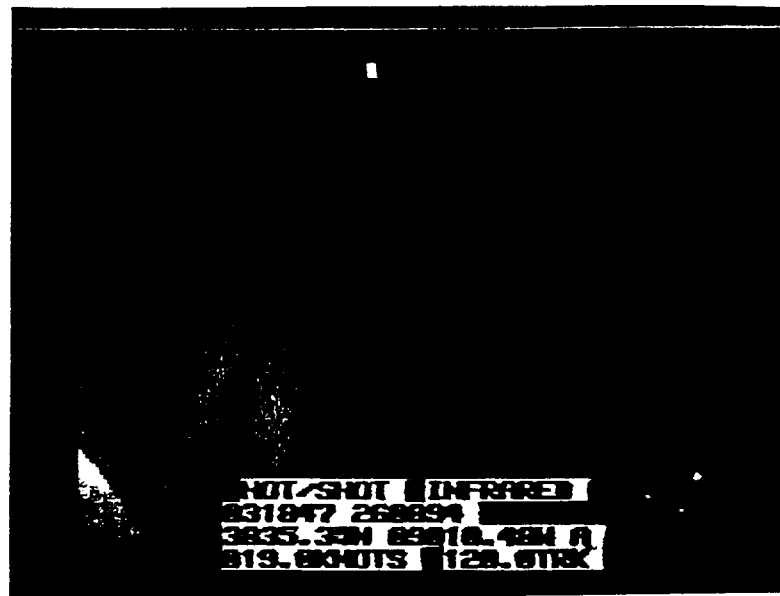
Picture 1: Landfill Overview



Picture 2: Eastern Half

HOT/SHOT

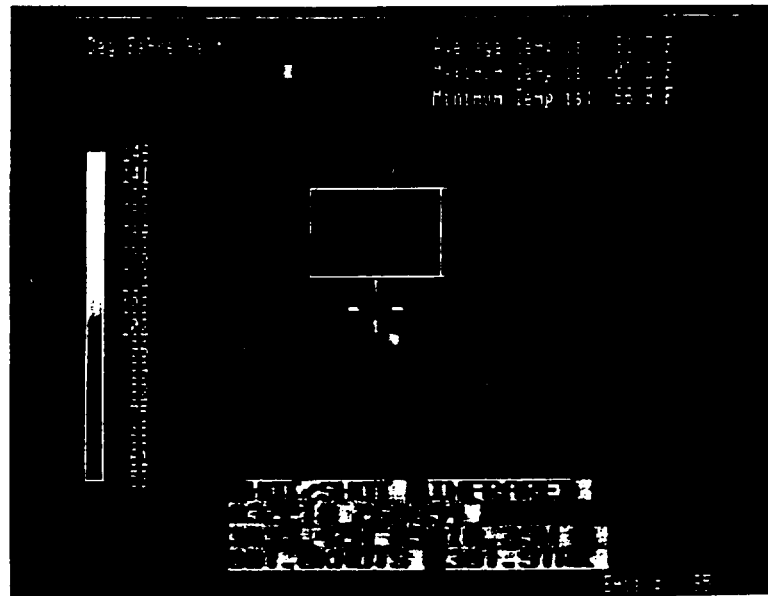
Infrared Inspections



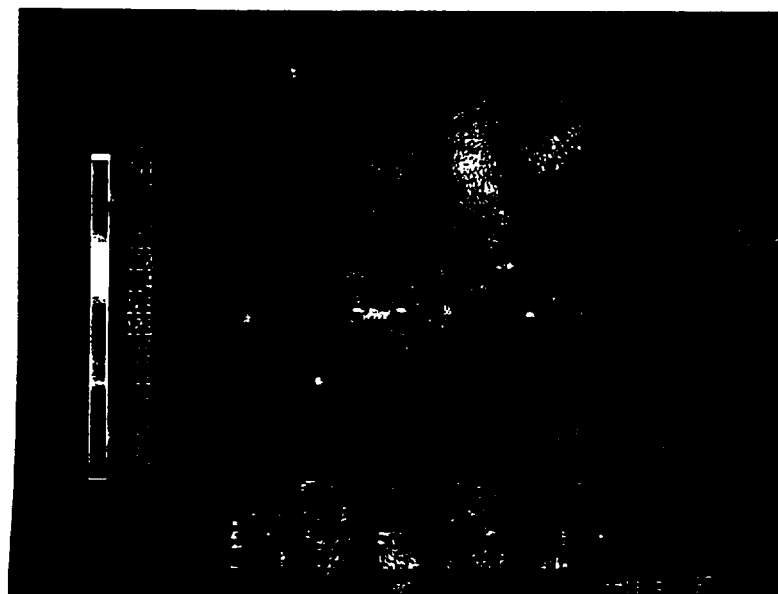
Picture 3: Western Half

HOT/SHOT

Infrared Inspections



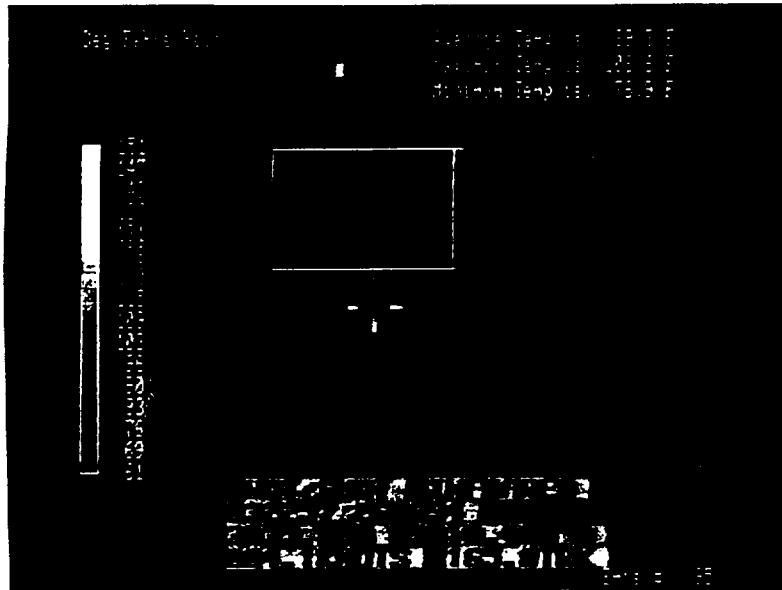
Picture 4: Northeast Quarter - Hotspots



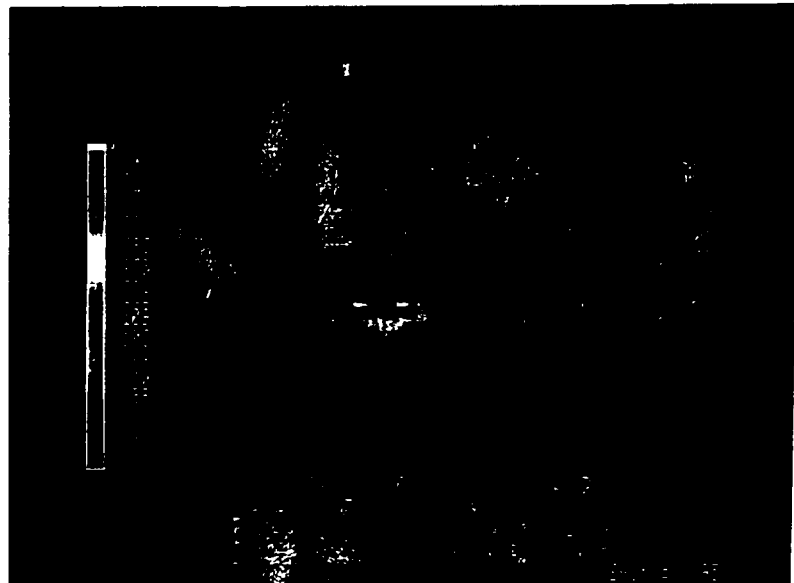
Picture 4a: Colorization of Picture 4

HOT/SHOT

Infrared Inspections



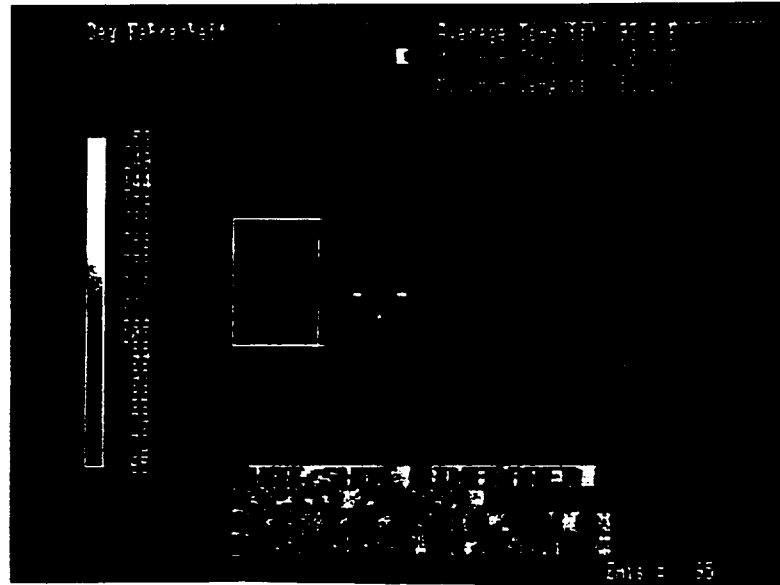
Picture 5: Close up on West Oil Pit



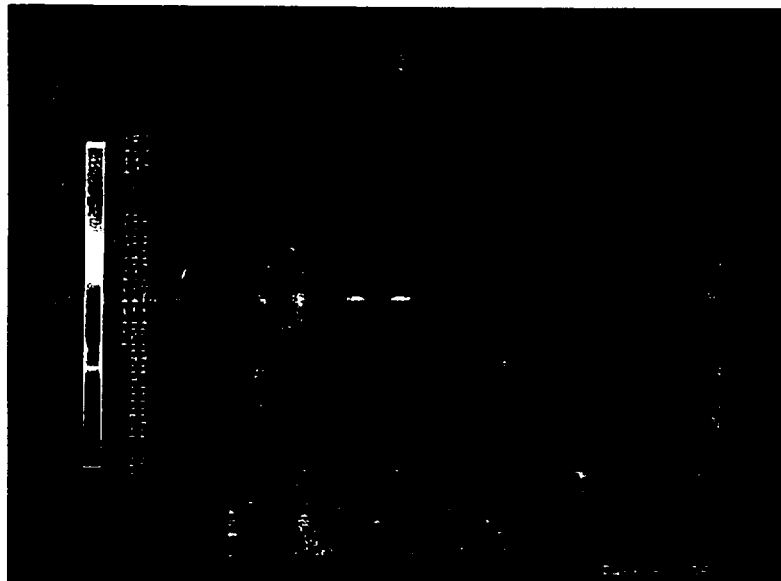
Picture 5a: Colorization of Picture 5

HOT/SHOT

Infrared inspections



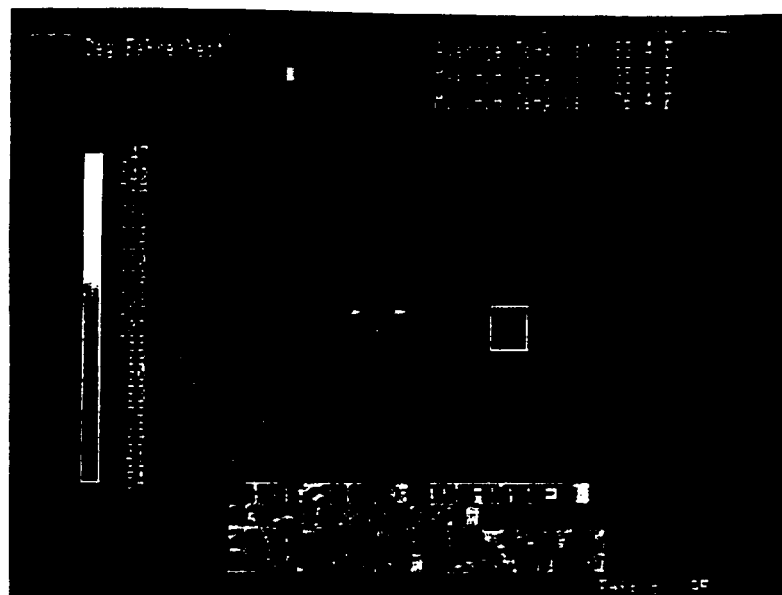
Picture 6: Close up of South Center Hot Spot



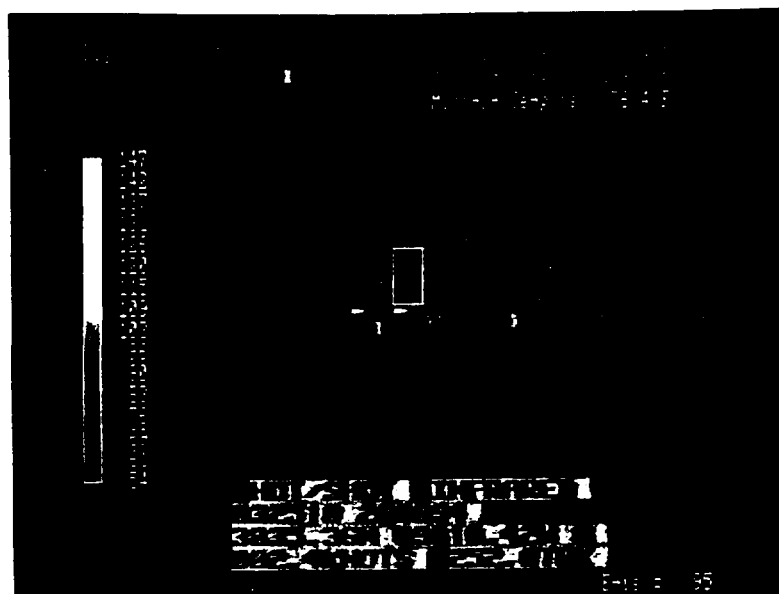
Picture 6a: Colorization of Picture 6

HOT/SHOT

Infrared Inspections



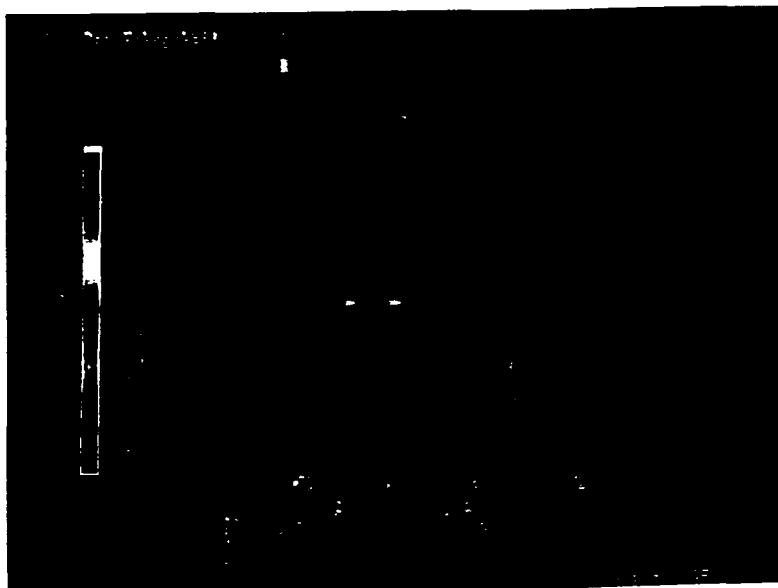
Picture 7a: Ravine Hot Spots



Picture 7b: Ravine Hot Spots

HOT/SHOT

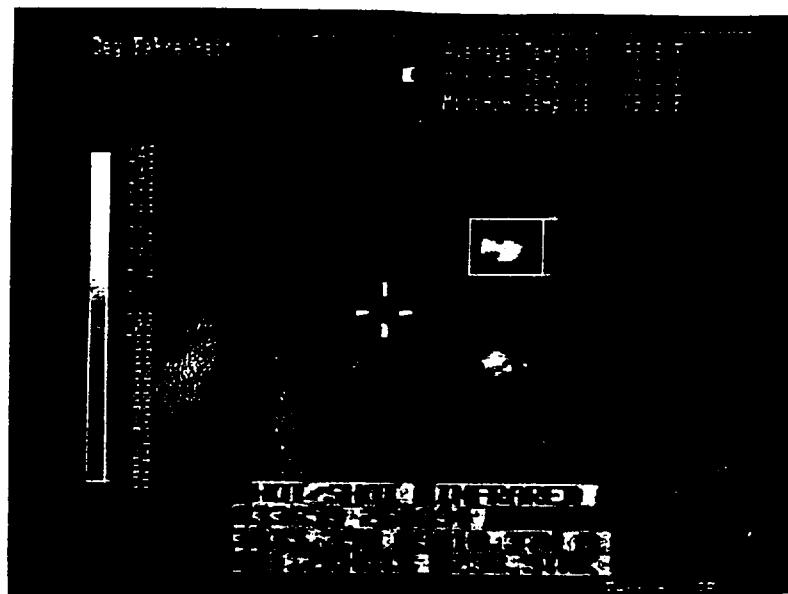
Infrared Inspections



Picture 7c: Colorization of Pictures 7a & 7b

HOT/SHOT

Infrared Inspections



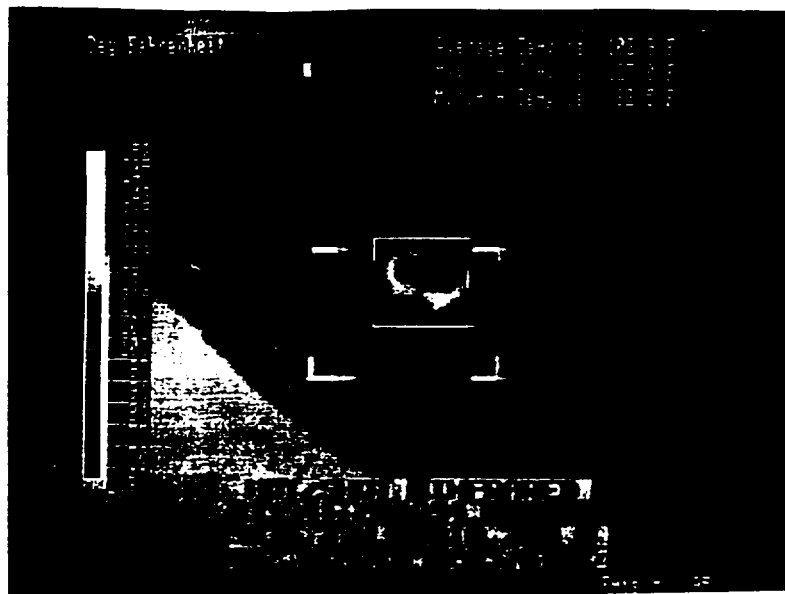
Picture 8: Hot Spot @ Western Oil Pit



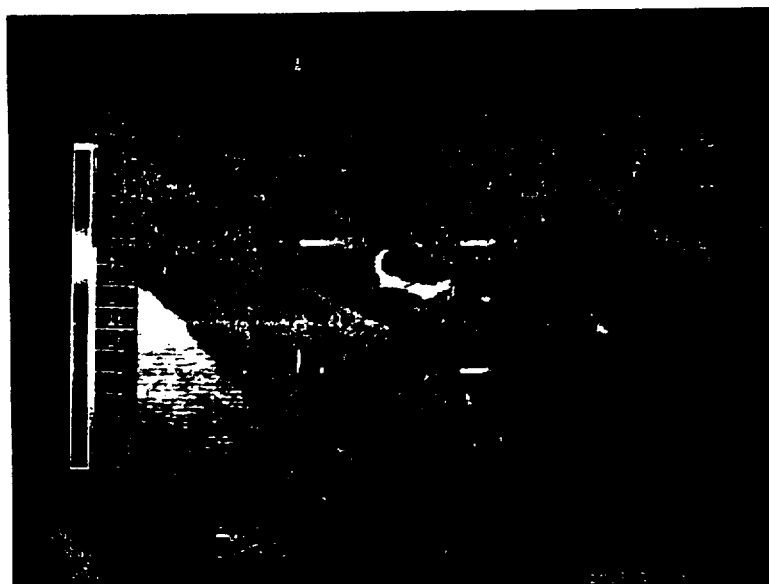
Picture 8a: Colorization of Picture 8

HOT/SHOT

Infrared Inspections



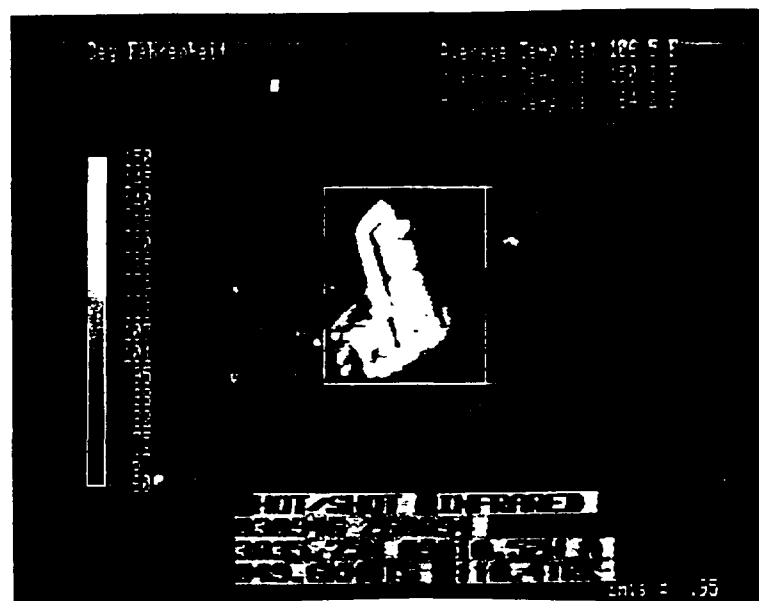
Picture 9: Hot Spot @ North Center



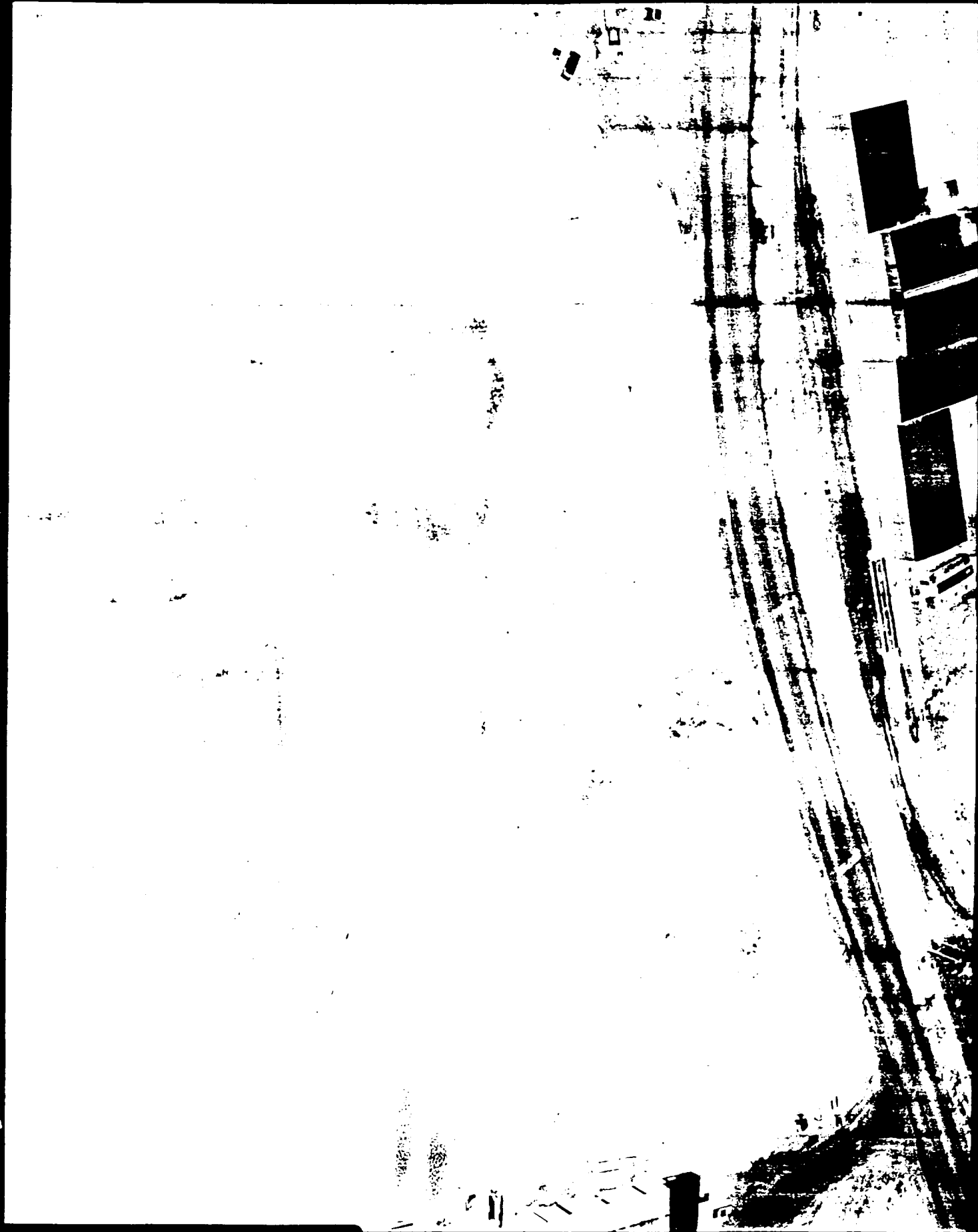
Picture 9a: Colorization of Picture 9

HOT/SHOT

Infrared Inspections



Picture 10: Industrial Equipment

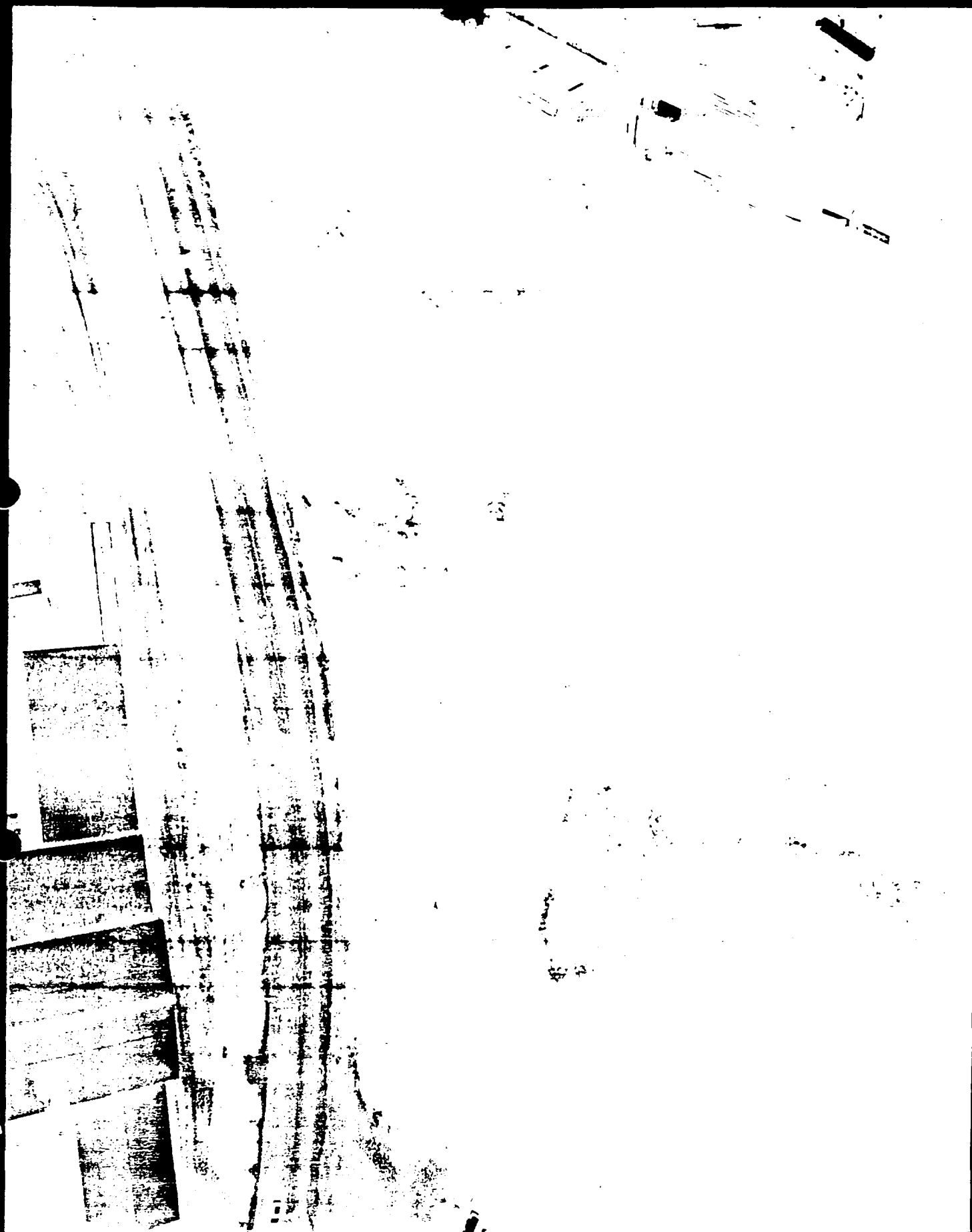


Satellite

Picture #1

Full Overview - Facing North

1150



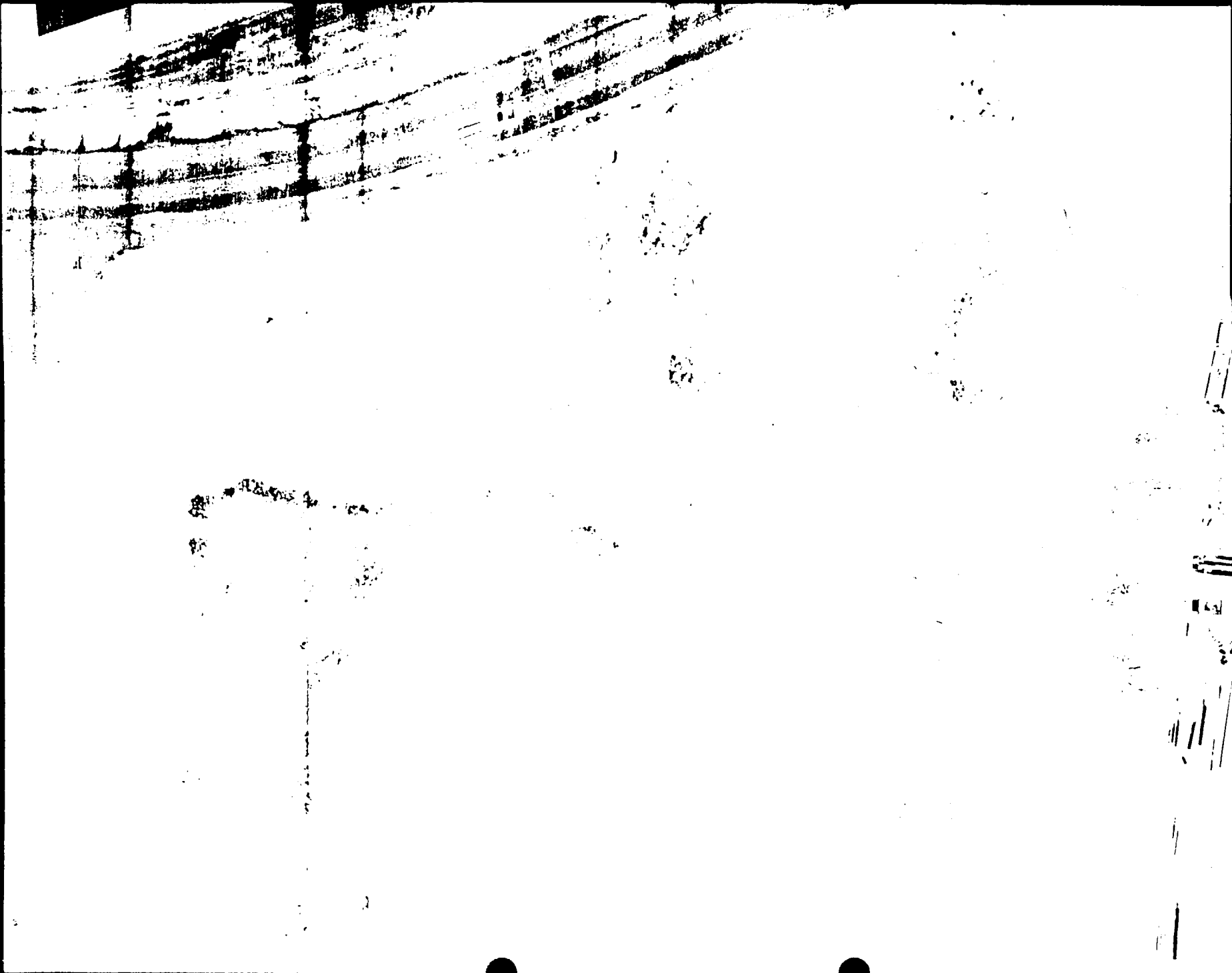
Picture #2

Full Overview - Facing South

Side

ture #3

.1 Overview - Facing South



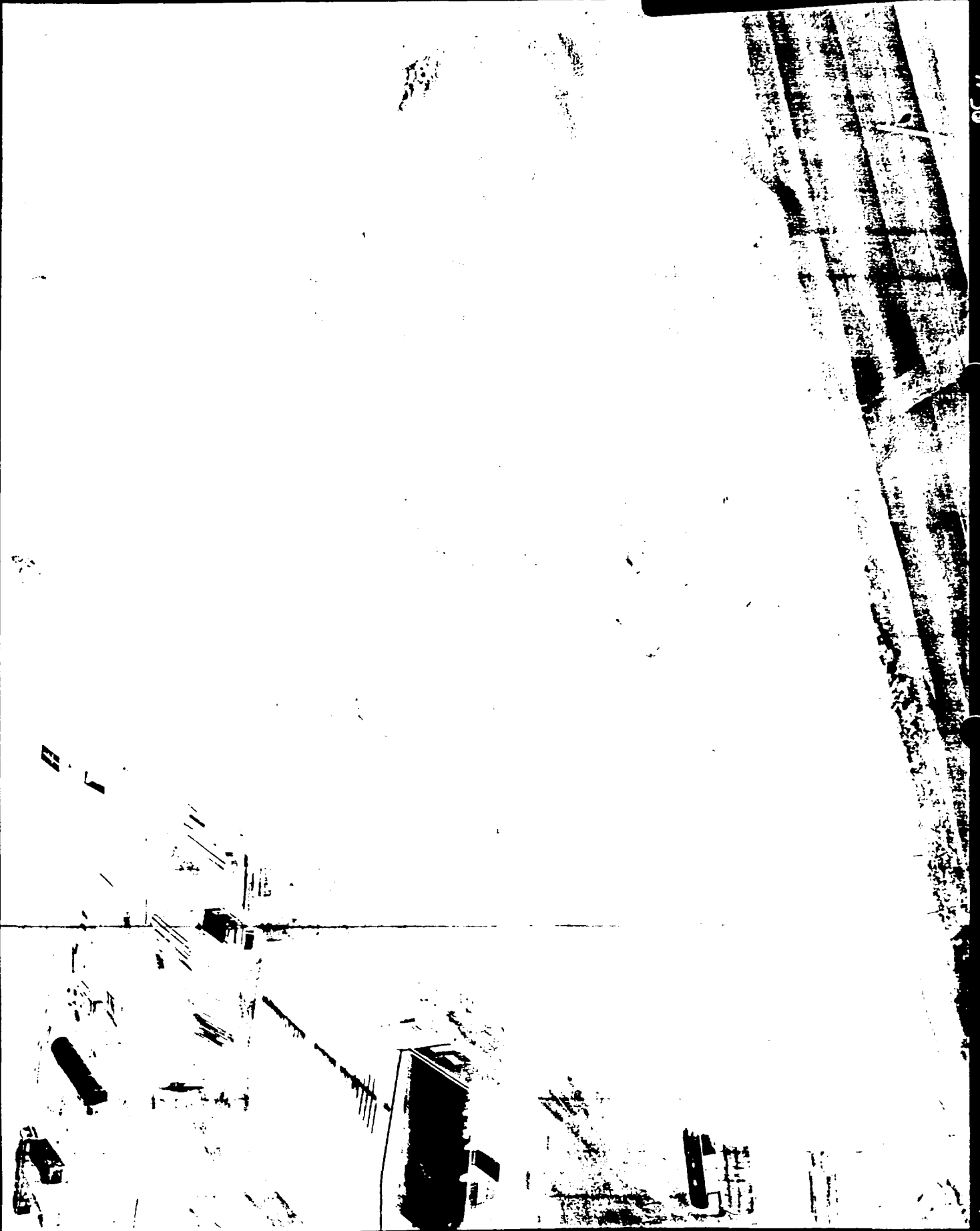
Picture #4

Full Overview - Facing North

Northeast Quarter - Facing South

Picture #5

Sidley



©Silla

Picture #6

Center - Facing North

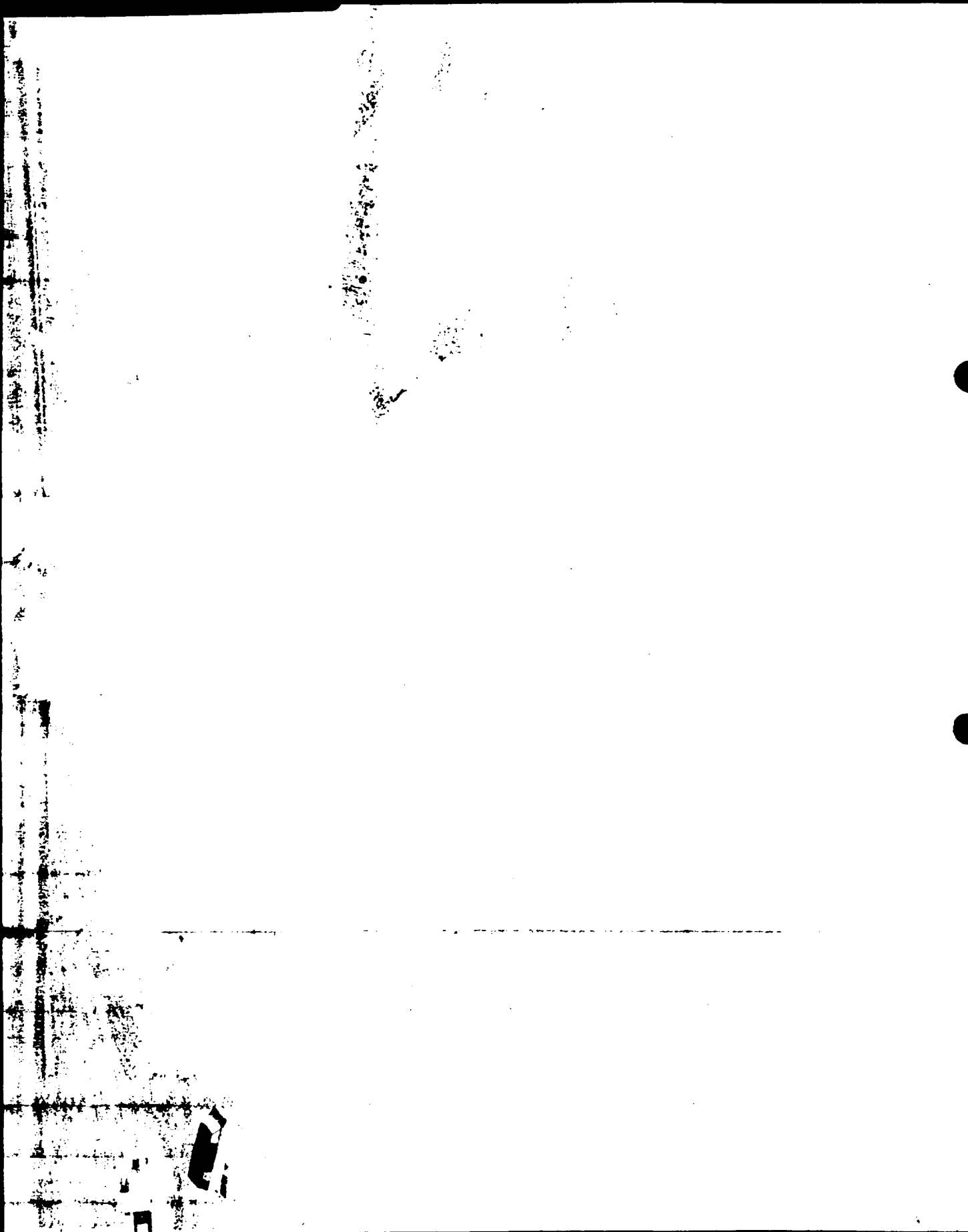
5116

Picture #7

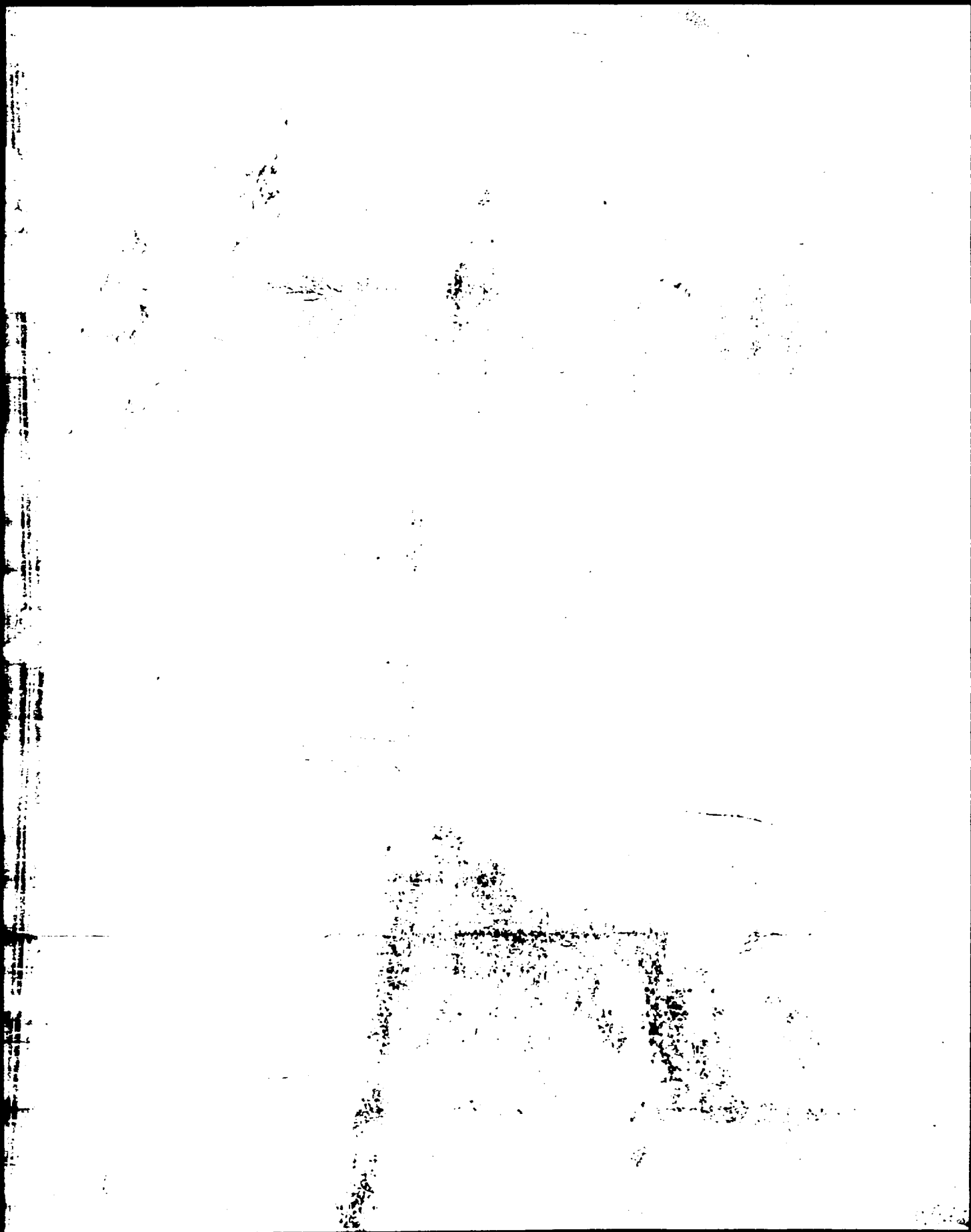
Northwest Quarter - Facing South

Southwest Quarter - Facing North

Picture #8

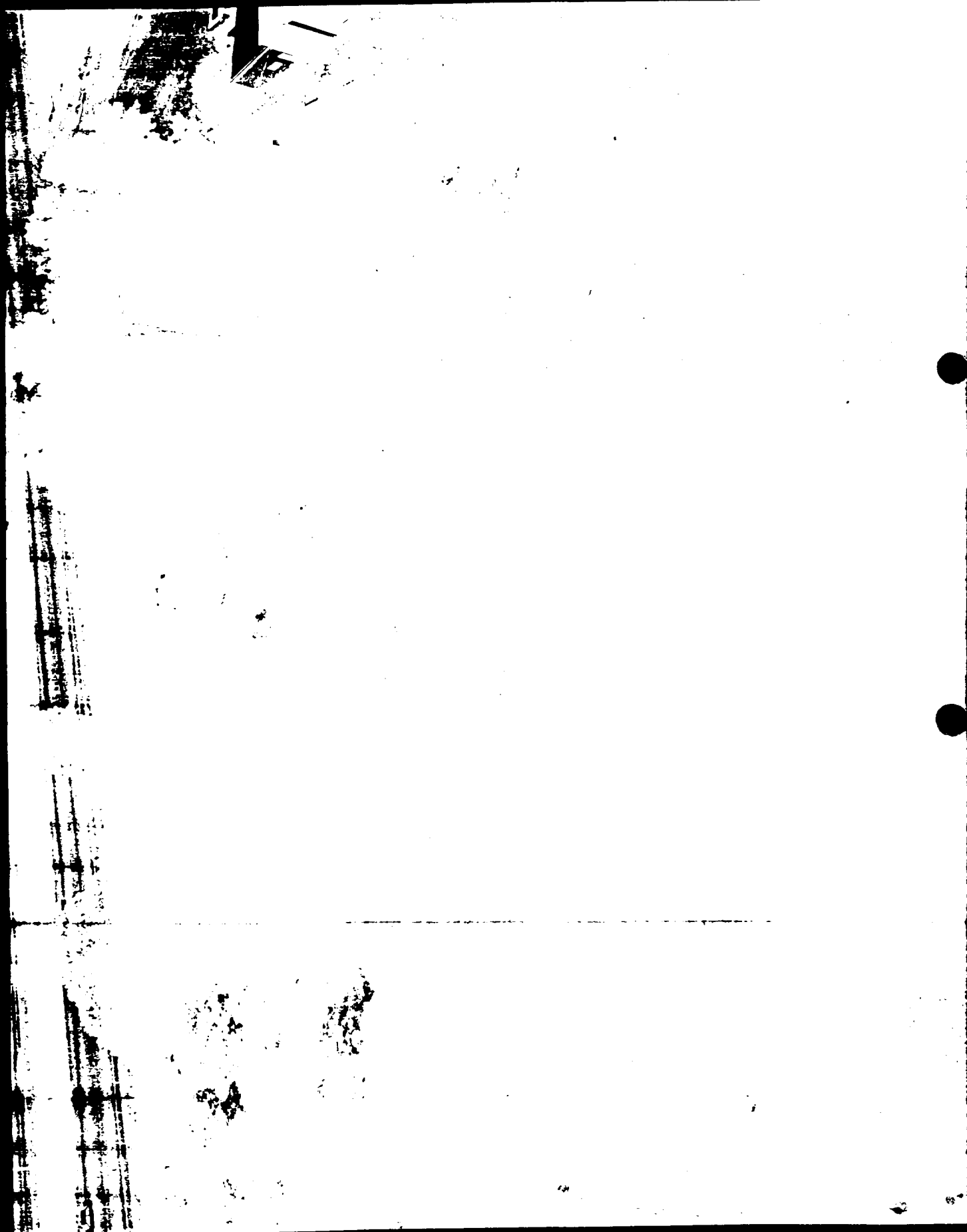


Sidda



Southeast Quarter - Facing North

Picture #10



Date: June 9, 1994

From: Paul E. Takacs, MSH/DMH/EMPH

To: Terry G. Ayers

Subject: 1163020000 - Site C1
Sauget site (Area 1)
Superfund/Remedial Investigation

This is to document events concerning underground fires that have occurred at Site G. Areas of the site have been burnt, notified that portions of the site have been burnt, to recommendation was made to permit the site to be sampled. Because of the presence of the site, a great deal of work was done and chlorophenols prior to the burn.

On June 3, IEPA analyzed USEPA in composite soil samples inside the more contaminated areas within the fence that were impacted by the fire. It was also noted that two separate areas of the drum disposal area at the site had a reddish color and that there were still burning. The smoke had been crystalline substance noted a 70ppm concentration. A pit had been excavated and the material was found next to the burning area. The products and a material resembling pumpkins were taken at Site G.

Several dioxin samples were taken from the outside the fence at Site G. In addition, the soil was taken from the alleged burning at the site. An incident occurred at the property owner (Wise Engineering) and the site was called to put out the fire. The fire department flooded the burning area and the fire was extinguished. Because of this action, the fire was extinguished and the area was flooded with contaminated runoff.

IEPA and USEPA returned to the site for sampling on June 6 after it was determined that the fire was out of control. The perimeter of the site was set up near the residential area and the sampling was conducted. The Sauget fire was contained. Indicated that the fire had been called out April 11. The fire department was called at Site G which was full protective fire. The fire department was called at Site G which was full protective fire.

FAX TRANSMITTAL

Page 3

To <u>Steve Skare</u>	From <u>S. Barrios</u>
Org./Agency	Phone #
Fax #	Fax # <u>663-1090</u>
NSN 7540-01-317-7388 9099 101 GENERAL SERVICES ADMINISTRATION	

MEMORANDUM

Date: June 9, 1994

From: Paul E. Takács, BOL/DRM/FSMU

To: Terry G. Ayers

Subject: L1630200005 -- St. Clair County
Sauget Sites (Area 1) -- Sauget
Superfund/Technical Reports

This is to document events concerning underground fires that have occurred at Site G over the past few months. After IEPA was notified that portions of the site appeared to have been burnt, a recommendation was made to perform surface soil sampling to determine if the site posed a greater health hazard. Because of the presence of very high concentrations of PCBs and chlorophenols prior to the burn, dioxin sampling of soils was included.

On June 3, IEPA assisted USEPA in taking composite soil samples inside the more visibly contaminated areas within the fence that were impacted by fires. It was also noted that two separate areas of the drum disposal area at the east-central portion of Site G were still burning. The smoke had a reddish color and the HNU noted a 70ppm concentration. A pinkish-brown crystalline substance was found next to the burning areas. Composites of the crystalline substance as well as several tar-like products and a material resembling pumice were taken at Site G.

Several dioxin samples were composited just outside the fence at Site G. In addition, one soil composite (at Judith Lane and CS-C) was taken between the neighborhood and the alleged burning at the site. An interview with an employee of the property owner (Wiese Engineering) said that the Sauget Fire Department was called to put out the fires. The employee noted that the fire department flooded the burning area with water 24 hours a day for two weeks. Because of this action, a low lying area of about one acre was flooded with contaminated runoff. A water sample at this area was taken also.

IEPA and USEPA returned to Site G to conduct air sampling on June 6 after it was learned that the burning was again out of control. Summa canisters were set up around burning areas as well as around the perimeter of the site. A station was also set up near the residential area on Judith. After the air sampling was conducted, the Sauget Fire Department indicated that they had been called to extinguish fires at the site about four or five times since early last April. The fire department chief said that his firemen wear full protective gear when dealing with fires at Site G which he said resulted from spontaneous combustion.

The property owner was told to notify IEPA in the event that the fires start again. If they do, USEPA will conduct further air sampling to determine offsite effects of the burning. It is likely that Site G would be eligible for emergency action (e.g. capping) if further air sampling indicates a significant offsite health impact. IEPA has long recommended to USEPA that a surface removal would have to be conducted before the placement of a cap at Site G.

cc: Ken Mensing
John Justice
Glen Savage
Larry Eastep
Stan Black
Tom Hornshaw
Kim Hubbert
David Webb, IDPH
Division File

NONPRIORITY POLLUTANT COMPOUND LIST - SAUGET SITES*Monocyclic List***Volatile Organics**

Methyl-iso-butyl ketone
Methyl-isoamyl ketone
m-Xylene
o-Xylene
p-Xylene

Acid Extractable Organics

4-chlorophenol

Base/Neutral Extractable Organics

2-Nitroaniline
4-Nitroaniline
2-Nitrochlorobenzene
4-Nitrochlorobenzene
2,4-Dinitrochlorobenzene
3,4-Dinitrochlorobenzene
4-Nitrophenylamine
Triphenyl Phosphate



ecology and environment, inc.

International Specialists in the Environment

Job Number

ZT 2051

Sauget Areas 1 & 2

Sauget, St. Clair County, Illinois

5/27/94 Saugat Area 1 (Site G) EIL08368AA

5/27

- 0615 OSC S. Borries & TATM S. Skare conduct organizational meeting at hotel. Discuss sampling plans at site, site room, etc. 1145 TAT
grid -
- 0750 TAT Skare & OSC Borries. TAT & OSC calibrate instruments. - Scan
- HNU: Calibrate combustion gas at 59 ppm (Unit 5 - EPA# 339203) 1200 TAT
- MSA C&T: Calibrate with methane gas at 15% oxy & 44% LEL (Unit 24) - Scan
- 0800 Safety meeting: Discuss chemical hazards, air monitoring procedures, decon procedures, strip trip & physical hazards, hospital route. 1205 TAT
1210 TAT
- Level C for the site. Wiese Company has local telephone. the
- 0805 Weather conditions: Partly cloudy, cool, high near 70°F expected. 1220 OK, TA
- 0905 TAT Skare arrives back on site after calling office and buying pickup from hardware store. OSC off to back on site after making phone call. 1230 IEPA
near
- o Meet w/ state IEPA personnel Paul Tackus & Kim Hubbard. TAT
- TAT & OSC suit up in Level C to conduct air monitoring/site room along with IEPA Hubbard. Open lock on gate to Site G Landfill. 1240 TAT,
peris
- 0930 TAT, OSC, IEPA enter site G landfill for reconnaissance. Air monitoring 1300 TAT
HNU: 0.4 ppm background.
- MSA 261 CG3: 0% LEL & 20.8% oxygen
- 0940 Reson at the east end of Site G. Red crystalline material near gaps of drums. Appears to be burning (Smoke plume). HNU records 40 ppm directly in the smoke plume
- 1010 ~~Leak~~ Another bur pile of red material burning. HNU reading 7 ppm near edge of smoke plume.
- o TAT Skare, OSC Borries, IEPA Hubbard enter hot zone after air monitoring/recon. - photodocumented the site and got general layout of landfill area.
- 1050 TAT, OSC, IEPA personnel enter hot zone to collect samples from burn piles, tar pits, water depression, other areas.
- 1100 TAT, OSC collect sample GS-C3D4-101 from the ravine with drums, and burning red crystalline material (composite).
- 1115 TAT collect sample GS-C2W-105 of the surface water of the water-filled depression. (grab samples).
- 1130 TAT collects composite soil sample from the landfill GS-C4-102 in grid C4 from map in previous EPI report (IEPA)

Steve J. Skare 5-27-94

5/27/94 Sample Area 1 (Site G) EIL08365A4

1145 TAT collect soil composite from landfill in backfill from
grid # C6 in the pit near ravine w/ burning oil material
- Sample # GS-C6-103.

1200 TAT collect soil composite from land from grid # B6,
- Sample # GS-B6-104. (int 24)

1205 TAT Skene, OSC, IEPA personnel exit hot zone.

1210 TAT, OSC collect composite sample GS-DIX-106 from along
the east perimeter, outside the fence line.

1220 OR, TAT collect soil composite sample GS-DIX-107 from along
the north perimeter along outside of culvert along Quincey Ave.

1230 IEPA, TAT collect soil sample composite from along Tull Lane.
near Dead Creek (SE intersection of J. Lane & Dead C.) (GS-DIX-108)

1240 TAT, OSC collect collect soil sample composite along creek
perimeter along outside of fence line, GS-DIX-109.

1300 TAT Skene, OSC Barker, IEPA Tackus & Hubbard offsite.

Flowing from
S-27-94

102

101

100

99

98

97

96

95

94

93

92

91

90

89

88

87

86

85

84

83

82

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
77 West Jackson Boulevard
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO. 94V		PROJECT NAME TOS-9405-803		NO. OF CONTAINERS		Activity Code:									
SAMPLERS: (Print Name and Sign) Steven J. Skane						TAG NUMBERS									
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	Analyte:	Total RCRA Metals	TCLP RCRA Metals	PCB/Pesticides	Dioxin (Full Scan)	TCLP SVOCs	Total SVOCs (Long list)	Total VOCs (Long list)	TCLP VOCs	
GS-C304-101	5/21/94	1100	X		Site G Landfill	3-802	✓	✓	✓	✓	✓				
GS-C4-102	5/27/94	1130	X		Site G Landfill	3-802	✓	✓	✓	✓	✓				
GS-C6-103	5/27/94	1145	X		Site G Landfill	3-802	✓	✓	✓	✓	✓				
GS-B6-104	5/27/94	1200	X		Site G Landfill	3-802	✓	✓	✓	✓	✓				
GS-DIX-105	5/27/94	1115		X	Site G Landfill	3-3202	✓		✓	✓	✓	✓		Verbal: 2 week turnaround	
GS-DIX-106	5/27/94	1210	X		Site G Landfill	1-802			✓					Hardcopy: 3 week turnaround	
GS-DIX-107	5/27/94	1220	X		Site G Landfill	1-802			✓					QA Level II Data Package	
GS-DIX-108	5/27/94	1230	X		Site G Landfill	1-802			✓						
GS-DIX-109	5/27/94	1240	X		Site G Landfill	1-802			✓					Send results to:	
														Mary Jane Rigg	
														Ecology & Environment, Inc.	
														111 W. Jackson Blvd.	
														Chicago, IL 60604	
														Tel No. (312) 663-9415	
														Fax No. (312) 663-1090	
Relinquished by: (Signature) Steven J. Skane			Date / Time 5/27/94 1900		Received by: (Signature)			Ship To: Twin City Testing Corporation 737 Pelham Blvd St. Paul, MN 55114							
Relinquished by: (Signature)			Date / Time		Received by: (Signature)			ATTN: Terry Uecker							
Relinquished by: (Signature)			Date / Time		Received for Laboratory by: (Signature)			Date / Time		Airbill Number Federal Express Airbill No. 2867526270					
Chain of Custody Seal Numbers C-0-C Nos. 170776 & 170777															

Saugat F.D. Roger Thibon Field

7/14/94

Saugat Area 1 - Side G - reports of incident fires

using 2 1/2" line off hydrant ~ 250 gal/min

Date	IN/OUT
3-22-94	12:20 to 1645 (4.25 hrs)
3-3-94	1508 to 1700
3-21-94	2228 to 2256 (30 min)
3-18-94	1345 to 1830 (4.25 hrs)

- 1st out here - let it flow overnight - that last picked on Sunday.
- 2 men called out - man hauled
- caused by sparks
- due to spontaneous combustion - classified as weed fire
- fires are rekindling
- a history of fires have been documented over several years (last time approx 2 yrs ago)
- fire was rekindling in the ravine near the tree line (where red crystalline soil)
- During rain storms, Queen Ave. backs up 3 1/2' by Doak Creek crosses near sewer

SITE G - COST ESTIMATE (ROUGH)

- (A) Water Treat
- ① $Vol = 2.5 \text{ ac} \times \frac{43,560 \text{ ft}^2}{\text{ac}} \times 3 \text{ ft} \times 7.48 \frac{\text{gal}}{\text{ft}^3}$
 $= \underline{2,443,716 \text{ gal}}$
- ② Carbon - 1,000 lbs.
1/16. disposal
- ③ 50KW generator
- ④ 2 operators (2-12 hrs shifts)
- ⑤ Trans to & from Detroit
- (B) Sediments - excavation
 $2.5 \text{ ac} \times \frac{43,560 \text{ ft}^2}{\text{ac}} \times 0.33 \text{ ft} = \underline{1350 \text{ cy.}}$
- (C) Plug MWS
- Limestone.
- 2 days labor.